MAINTENANCE TECHNICIAN 3

POSITION SUMMARY: This position is responsible for performing specialized and complex automation, electrical, mechanical, and technical work within the utility plants. Employees in this position act in a capacity to insure compliance with established standards, codes, rules, and regulations related to water/wastewater plant process and maintenance programs. Independent judgment is required to plan, prioritize, and organize a diversified work load. This position may serve as the acting supervisor to subordinates and peers when assigned. Advice and leadership are available from supervisor or designee for complex issues or those requiring authorization.

SUPERVSION RECEIVED: Work is performed under the direction of the departmental supervisor or designee.

ESSENTIAL JOB FUNCTIONS: *An employee in this position may be called upon to do any or all of the following essential functions. These examples do not include all of the duties which the employee may be expected to perform. To perform this job successfully, an individual must be able to perform each essential function satisfactorily.*

1. Perform highly skilled and advanced technical work including installing, calibrating, diagnosing, repairing and maintenance of automated, computerized, electrical and electronic systems and equipment.

2. Perform highly skilled and advanced technical work including installing, diagnosing, repairing, and maintaining mechanical, HVAC, and plant process equipment.

3. Provide leadership in the maintenance department by serving as a resource and mentor to less experienced personnel. Assist in the development, training, and hiring of new employees. Serve as acting supervisor when called upon.

4. Provide customer service and respond to routine and non-routine inquiries in a courteous manner, provide information within the area of assignment, and resolve complaints in an efficient and timely manner. Follow up within the scope of authority, make recommendations, and/or refer to a supervisor if outside the scope of authority.

5. Oversee and participate in the maintenance and repair of a variety of infrastructure, equipment, tools, and facilities.

6. Collaborate with contractors and engineers regarding plant projects. Review and analyze blueprints and specifications and provide recommendations.

7. Research, review, and recommend quotes for service and requests for proposals including the purchasing of supplies and equipment under scope of authority.

8. Prepare and provide information for records and reports including logs, documentation of work activities, and supply inventory within a computerized maintenance management system (CMMS). Create and update maintenance tasks and procedures.

9. Maintain a clean, safe, and professional work environment.

10. Perform related duties as required.

If assigned to electrical, examples of work may include:

- Maintain applications software and utilities required to support Supervisory Control and Data Acquisition (SCADA) applications.
- Perform highly skilled and complex tasks relating to utility plant SCADA systems including designing, debugging, implementing, and modifying SCADA system alarms, objects, and graphics.
- Diagnose and repair communication issues at the PLC, SCADA, and network level.
- Perform data collection analysis on historical tags to identify deficiencies involving plant process.
- Work actively with other departments on the SCADA system implementation and identify plant process improvements through the application of SCADA technologies. Will assist with IT projects.
- Support plant automation by calibrating, diagnosing, installing, and repairing process instrumentation including flow meters, level transmitters, analyzers and related water/waste water electronic devices.
- Create or modify existing PLC programs to meet changes in equipment design and operations and prepare necessary documentation.
- Develop programming for a Wonderware System Platform including: system development, testing and evaluation, installation, and configuration.

If assigned to mechanical, examples of work may include:

- Perform highly skilled work in installing, inspecting, repairing, diagnosing, and maintaining mechanical and plumbing systems such as building HVAC systems, pumps, and plumbing systems.
- Perform highly skilled mechanical work installing, diagnosing, and repairing industrial sized vertical turbine and horizontal split case pumps and positive displacement, centrifugal, diaphragm, and rotary lobe pumps.
- Perform highly skilled HVAC work installing, diagnosing, and repairing make-up air units, powered roof ventilators, boilers, chillers, industrial dehumidifiers, humidifiers, compressors, and air conditioning.
- Maintain systems by diagnosing, repairing, and replacing compressors, condenser motors, evaporator motors, metering devices, temperature and humidity controls, fans, control panels, switches, fuses, filters, gauges, ducts, piping, tubing, and related components.
- Perform highly skilled work on blower systems, centrifuge systems, conveyors, sludge collection systems, and chemical feed systems.
- Maintain, program, and troubleshoot plant HVAC systems through the Building Automation System (BAS).

KNOWLEDGE, SKILLS AND ABILITIES: *The requirements listed below are representative of the knowledge, skills, abilities and minimum qualifications necessary to perform the essential functions of the position. A qualified individual with a disability must be able to perform the essential functions of the position with or without reasonable accommodation.*

A. A high school diploma or equivalent and eight years of progressively responsible work experience in the areas of, plumbing, electrical, HVAC, automotive, or mechanical. An associate's degree in a related field is preferred but not required.

B. Possess and maintain lift truck, scissor lift, and aerial lift certifications, as assignment requires.

C. Possess a valid Michigan motor vehicle operator's license.

D. Maintain the licenses and certifications required for this classification.

E. Demonstrate proficiency in related aspects of the essential job functions of the maintenance 1 and maintenance 2 positions.

F. Basic understanding of training and supervisory techniques. Demonstrate skill in planning, organizing, scheduling, direction and coordinating work activities.

G. Thorough knowledge of operational characteristics, services, and activities of a water or wastewater system maintenance program. Possess thorough knowledge of the methods, materials, and equipment used in utility plant and process operations.

H. Possess a strong mechanical aptitude, good powers of observation, and excellent troubleshooting skills.

I. Able to follow established procedures and carry out complex instructions with minimal supervision.

J. Able to work as a team and with minimum supervision. Possess self-supervising attributes and a positive, congenial attitude.

K. Has established effective working relationships and uses tact, good judgment, and resourcefulness when working with staff, volunteer workers, other governmental agencies, and the public.

L. Able to communicate effectively, prepare detailed and accurate work orders and other reports. Able to present ideas orally and in writing for varied audiences.

M. Demonstrate proficiency in the use of computers and software programs for asset management and specialized applications. Able to learn additional programs and software as required.

N. Able to understand, apply, and utilize appropriate protective equipment and safety protocols and department specific safety procedures. This includes chemical, traffic, and electrical safety, or other hazards.

O. Able to access and work in confined spaces and ability to work from heights.

P. Extensive knowledge safety precautions of plant operations and awareness of impact on

public health.

Q. Thorough knowledge of federal, state and local standards and codes relating to the related skilled trade or area of expertise. Maintains knowledge in the current research and development involved in area of expertise.

R. Thorough knowledge of operation and maintenance manuals (O&Ms), blueprints, wiring diagrams, and control schematics.

S. Able to travel to various locations both in and out of the City to receive additional training as deemed necessary.

ADVANCEMENT CRITERIA: *Employees are expected to gain technical knowledge and field expertise and demonstrate an increasing level of proficiency in all aspects of assigned work. They must meet the expectations of the appraisal process and display good attitude and initiative in order to advance within this classification. Before reaching G step of the classification and salary schedule, employees must successfully complete the advancement requirements of G-K. Employees who fail to obtain these requirements will not advance past the F step; additionally, failure to maintain the required licenses and certifications of G-K will result in a salary reduction to F step.*

Electrical—A-F classification requirements, must have significant experience in:

- SCADA systems including programmable logic controllers, operator station interfaces, protocols, and data communications.
- Control system programming including SCADA, Human Machine Interface (HMI), and Programmable Logic Controller (PLC) code development.
- Debugging and writing programming in languages such as ladder logic, function block, structured text, and Visual Basic.
- SCADA software including Wonderware, RS Logix 500, Studio 5000, and RS Linx, FactoryTalk, and Connected Components Workbench.
- PLC networking systems such as Ethernet, DeviceNet, and ControlNet
- Security system components including controllers, video surveillance cameras, and facility access devices. Knowledge of security software and the ability to configure, set schedules, and establish system access by programming key card access IDs.
- Computer networking principles and the ability to diagnose and solve data communication problems.
- Water and waste water instrumentation. Able to calibrate electronically with HART communication devices and physically with solutions or calibration standards.

Mechanical—A-F classification requirements, must have significant experience in:

- Diagnosing and performing complex and technical repairs on equipment and machinery at the City's water or wastewater treatment plants and facilities, including centrifuges, centrifugal blowers, conveyors, hydraulics, drives, industrial pumps, and other plant process equipment.
- Precision tools such as micrometers, calipers, vibration equipment, and laser alignment equipment to take accurate readings and measurements.
- Building automation system (BAS) and related computer hardware and components. Able to maintain, diagnose and configure BAS for optimal environment control. Able to perform software/hardware calibration and programming for proper equipment and system operation.
- Basic heating and refrigeration cycles. Able to diagnose, test, and troubleshoot HVAC systems. Refrigeration recovery, evacuation, and charging.
- The fundamentals of temperature and humidity measurement and control in HVAC systems.

G-K classification requirements regardless of area of expertise:

- Possess and maintain one of the following, as directed by and based upon the needs of the department:
  - State of Michigan S-2 Distribution License
  - State of Michigan F-3 Filtration License
  - State of Michigan C Wastewater License
  - Journeyman Electrical License
  - Michigan HVAC-R certification
  - MWEA Electrical Instrumentation Technologist Grade 3 or equivalent
  - MWEA Mechanical Technologist Grade 3 or equivalent
  - Advanced manufacturer training/certification in SCADA or PLC
  - OSHA HAZWOPER 40 hour training
  - Advanced MPSI enrollment

PHYSICAL DEMANDS AND WORK ENVIRONMENT: *The physical demands and work environment characteristics described here are representative of those an employee encounters while performing the essential functions of the job. A qualified individual with a disability must be able to perform the essential functions of the position with or without reasonable accommodation.*

While performing the duties of this job, the employee is regularly required to talk or hear. The employee is regularly required to communicate with others and view and produce written documents. While performing the duties of this job, the employee regularly works in the field and a maintenance facility and occasionally in a business office setting. The employee is frequently exposed to excessively noisy, wet, humid, snowy, and hot or cold conditions, and is occasionally exposed to noxious odors, dust, particles, or other adverse environmental conditions. The employee is frequently required to sit; use hands to finger, handle, or feel; and reach with hands and arms. The employee must frequently lift and move items of considerable weight. Bending, twisting, and stooping are also frequent requirements of the position. The employee may be exposed to uncontrollable environments, graphic scenes, and bio-hazardous or hazardous materials.

The employee frequently works near mechanical equipment and in excavations, confined spaces, and roadways. Work may involve working at various heights. The employee may enter residential, commercial, or industrial properties.

The employee is expected to work under deadlines with the potential for constant interruption and change. The employee may be required to work extended hours and may be called out or required to work in emergency situations. The employee must be able to perform manual labor for extended periods of time and under adverse climatic conditions. The employee is required to drive in inclement weather.

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